

IPI

CASE
SUMMARY

9



IOWA PRECISION INDUSTRIES

Cedar Rapids, Iowa
Linn County

Intern: Jason Assouline
Major: Civil/Environmental Engineering
School: University of Iowa



The Company

Iowa Precision Industries (IPI), employing nearly 100 people, designs and manufactures customized automated coiled metal processing systems primarily for the HVAC industry. Two large buildings (~ 75,000 ft², total) comprise IPI's main production facility, located at 5480-6th Street S.W., Cedar Rapids. IPI's production process includes sawing, machining, welding, painting and assembly, all of which are performed at this main facility. An additional facility (~ 5000 ft²) is located at 140-30th Street Drive S.E., Cedar Rapids. The sole function at this secondary facility is the production of boltless ductwork corners. The P2 intern focused on operations at the main facility.

Project Background

Four primary goals were delineated at the beginning of the summer to be accomplished by the P2 intern. These issues included the coolant usage and disposal in the machine shop, various aspects pertaining to paint booth operations, metal scrap reduction/management, and the development of an environmental management system (EMS).

Coolant in the machine shop was simply discharged in the sanitary sewer or allowed to run off the metal turnings and collect in the parking lot. Paint booth rags and filters were landfilled after use. Metal scrap is recycled at IPI but few measures have been taken to reduce this waste generated or to find creative means to reuse rather than recycle the metal. IPI has an extensive safety procedure manual yet it does not have an EMS.

Incentives to Change

While IPI is a small company, which doesn't produce large quantities of wastes, it is still mindful of the impacts that its manufacturing processes have on the environment. IPI already recycles all office paper, cardboard and cans. In addition IPI recycles all metal scrap generated at the facility. In order to comply with an Environmental Health & Safety (EHS) audit performed in November 2001, IPI applied for a P2 intern for the summer of 2002 hoping to make progress while incorporating suggestions outlined in a DNR Waste Reduction Assistance Program (WRAP) assessment performed in 1997.

Results

Through the Pollution Prevention (P2) summer internship program several waste reduction opportunities were identified. Many of these projects have already been successfully implemented while others have not fully been investigated due to the time constraints of the pro-



gram. Changes implemented have already accounted for annual savings of \$8,000, 2.5 tons of landfill avoidance and 6,000 gallons of water. Additional project proposals could save up to \$5,000 per year more as well as further reductions in landfill disposal and water consumption. Below is a table summarizing the cost of implementation and the expected annual savings of the projects investigated.

Project	Implementation cost	Expected annual savings
Machine shop 1. Coolant brand ¹ 2. Coolant recycling system ¹ 3. Coolant drainage system ¹	\$0 \$397 ^{2,3} \$0 ³	\$3,300 plus 6,000 gallons of water \$800 \$0 plus pollution prevention
Paint booth 1. New paint 2. New filters ¹ 3. Recycle rags ¹	\$0 \$0 \$0	\$5,000 \$800 plus one ton of solid waste \$3,000 plus 1.5 tons of solid waste
Assembly 1. Oil waste separators (3) ¹ 2. Aerosol paint cans ¹	\$927 ² \$0	\$0 plus pollution prevention \$0 plus pollution prevention
Environmental Management System 1. Facilitate future development	\$0	Infinite
TOTALS Net savings: \$11,576 the first year, then \$12,900/year after	\$1,324	\$12,900

¹Currently implemented opportunity

²Capital expense

³Labor/time less than one hour